



SUSTAINABLE BIOENERGY
SYSTEMS FOR OUR
LOW-CARBON FUTURE

Welcome

Patricia Thornley, Director, Supergen Bioenergy Hub



Core Academic Partners:

- Imperial College London
- University of Strathclyde
- University of Glasgow
- University of Surrey
- Aston University
- University of Southampton
- University of Sheffield
- University of Nottingham

Academic Partners joined by Agreement of Accession:

- Durham University
- Loughborough University
- UK Centre for Ecology & Hydrology
- University of Manchester
- University of Lincoln

Policy Partners:

- Department for Energy Security and Net Zero (DESNZ)
- Department for Environment Food and Rural Affairs (Defra)
- Department for Transport (DfT)

Industrial Partners:

- Alps Ecoscience
- Bauldreay Jet fuel Consulting Limited
- Compact Syngas Solutions Limited
- Croda
- Cultivate
- DAABON
- Energy Systems Catapult
- Engas UK Ltd
- Future Biogas
- Glass Futures
- REA
- Straw Innovations
- Terravesta
- Uniper
- Willow Energy
- Worley Consulting

Technology demonstration projects:

- Digitalisation and AI for AD, led by Michael Short, University of Surrey
- Hydrogen from biomass gasification, led by Scott Banks, Aston University
- Biowaste electrolysis, led by Jun Li, University of Strathclyde
- Hydrogen-BECCUS from waste, led by Manosh Paul, University of Glasgow
- rDME for off-grid energy, led by Ruoyang Yuan, University of Sheffield
- Bio-derived sustainable aviation fuels, led by Spiridon Siouris, University of Sheffield

Cross-cutting projects:

- Global indirect land use change (ILUC), led by Patricia Thornley, Aston University
- Biomass fractionation, led by Jason Hallett, Imperial College London
- Bio-based chemicals, led by Parimala Shivaprasad, University of Nottingham
- Scaling up feedstock production, led by Rob Holland, University of Southampton
- Biorefinery efficiency and scale-up, led by Ian Watson, University of Glasgow
- Maximising sustainability trade-offs, led by Mirjam Röder, Aston University

Aston University: De-risking Negative Carbon Biomass-based Ammonia: Digitalisation for Innovative Catalysis (DenCAM)

University of Nottingham: A machine learning surrogate model for the economic and environmental sustainability evaluation of bioplastics precursors

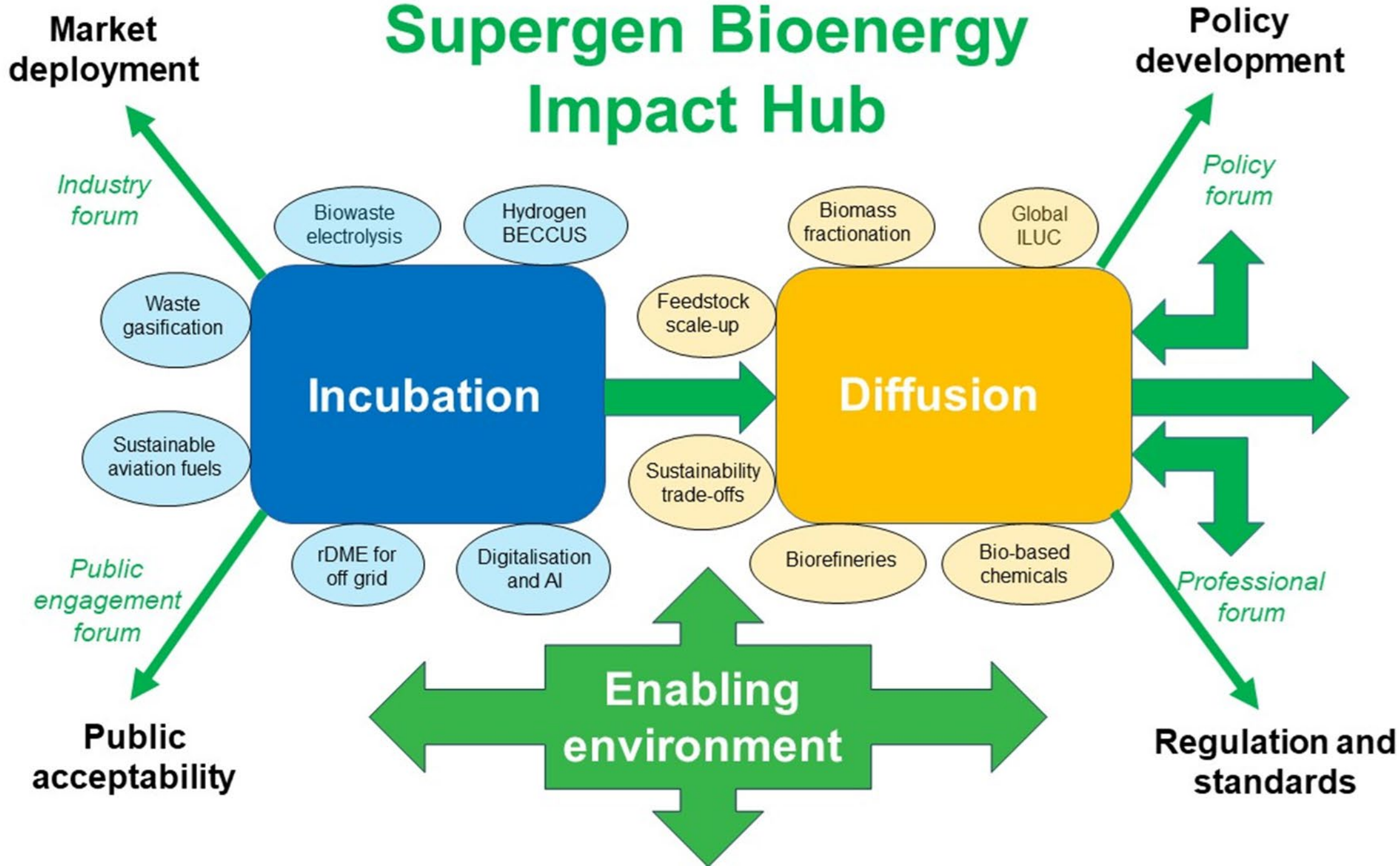
University of Lincoln: BioSusTOil - Developing sustainable insulation oil for power transformers via pyrolysis of biomass feedstock

Durham University: Development of Biochar-Based Functional Materials: Advancing a Sustainable Platform for Carbon Applications

Loughborough University: develop new polymeric coatings based on tall oil , for textiles for water and weather proofing.

University of Manchester: G2X: Exploring R&D, sustainability and scale-up opportunities of glycerol-to-X

Supergen Bioenergy Impact Hub



Central team



Rakhi Parmar
Project Manager



Nuala Macallister
Project Coordinator



Catriona Heaton
Stakeholder
Engagement Manager
(job share)



Rebecca Fothergill
Stakeholder
Engagement Manager
(job share)



Freya Horsfield
Policy Fellow

Engaging for impact

Catriona Heaton, Stakeholder Engagement Manager

Freya Horsfield, Policy Fellow

Excellent research

Trusted and transparent science

Innovation and commercialisation

Scientific confirmation and disproof

Knowledge sharing community

Connected community

Diffusion of research

Collaborative problem-solving

Sustainable deployment

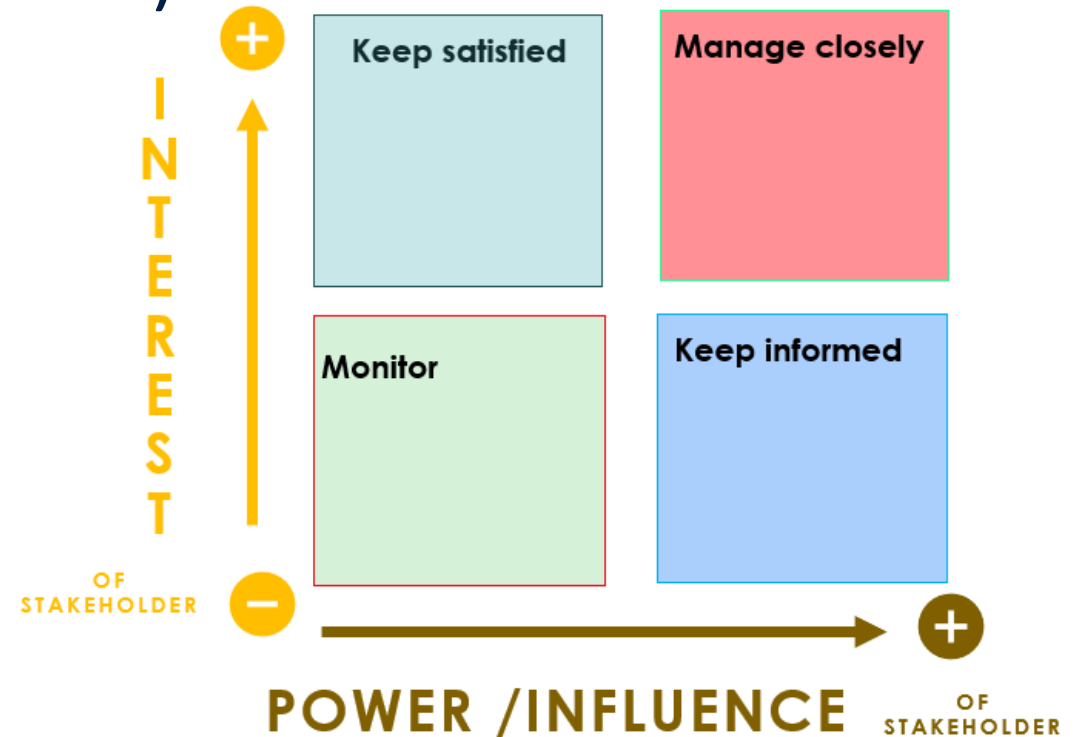
Research in practice

Influencing market levers

Sustainability assurance



- Project-led engagement
- Topic-focused engagement (via forums)
 - Hydrogen
 - BECCUS
 - Aviation and low-carbon transport fuels
 - Heat – industrial and rural
 - Bioproducts
 - Resource availability and land use
 - Sustainability
 - Digitalisation
- Outcome-focused engagement



Industry stakeholder groups – topic-focused

Hydrogen	BECCUS	Aviation and low-carbon transport fuels	Heat - industrial and rural	Bioproducts	Resource availability and land use	Sustainability	Digitalisation	Facilitators
Gasification	Power generators	Engine manufacturers	Biomethane	Platform chemicals	Farmers	Certification bodies	AI	Trade associations
Waste	Waste	Fuel suppliers	rDME	Coatings	Horticulture	Standards bodies	Digital twins	Professional bodies
Fuel cells	Energy producers	Biodiesel	Gas suppliers	Cosmetics	NZIP projects	MRV		Consultancies
Catalysts	CCS technologies	Bioethanol	Gas distribution	Personal care	Miscanthus	Blockchain		KICs
Power generators	Biorefineries	Biomethanol	BioLPG	Fragrance	Willow			Accelerators
Electrolysis		Aerospace/aviation	Biorefineries	Bioplastics	First generation crops			
Water treatment		Shipping/maritime		Biorefineries	Waste			
Accelerators		Road transport/automotives			Forestry			
Biorefineries		Oil						
		Biorefineries						

Industry Forum challenge topics

- Hydrogen
- BECCUS
- Aviation and low-carbon transport fuels
- Heat – industrial and rural
- Bioproducts
- Resource availability and land use
- Sustainability
- Digitalisation



Hosted by industry in different locations around the UK

Professional forum topics

- High-level information on biomass resources (how much we have in the UK, how much we import, supply chains)
- Ecosystems services delivered by purpose-grown biomass
- Biomass for heating (process heat, off-grid, efficiency, cost, airborne emissions)
- Transport fuels (carbon accounting implications)
- Information to inform regional and national energy strategies
- Hydrogen from biomass
- Sustainability standards
- Lifecycle assessment

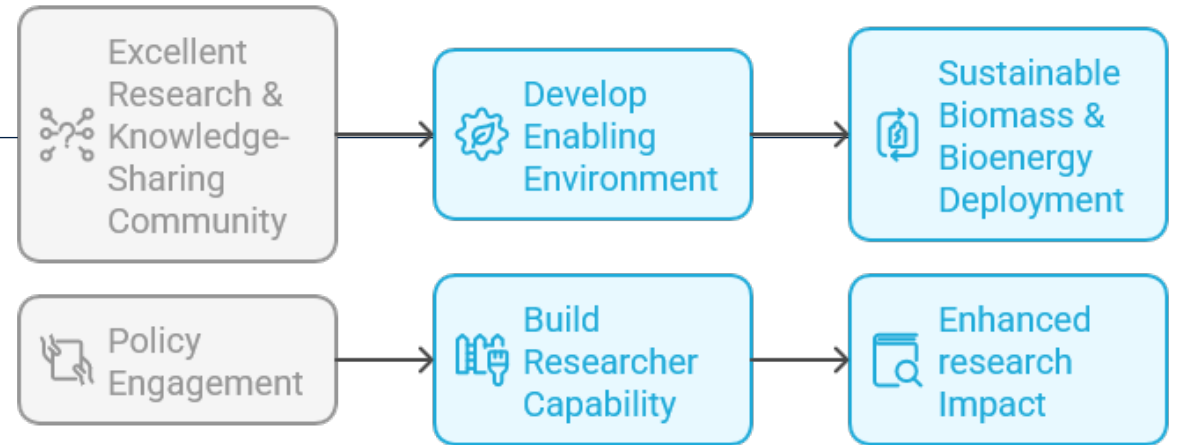


Public engagement activity

- Sustainability framework consultation
- Regional and place-based visions for biomass and bioenergy
- Impact stories blog series demonstrating impact
- Mythbusters to build trust and combat negative public perceptions
- Outputs from industry and professional forums



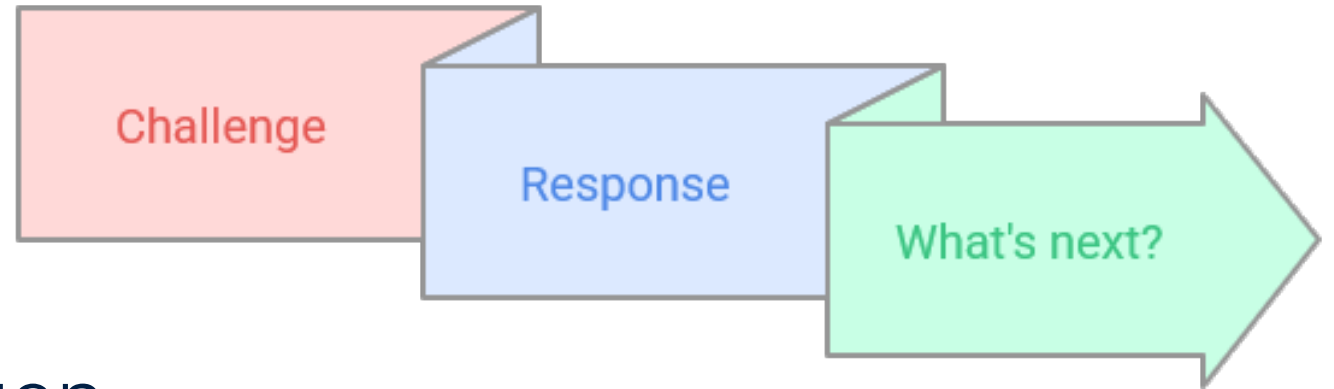
Policy engagement



Made with Napkin

- Ongoing dialogue with key Government departments
- Nominated Co-Investigator lead for specific departments
- Research-based responses to relevant Government consultations
 - *Upcoming opportunity: consultation on biomass sustainability framework*
- Researcher skill support programme eg ECR training at Future Biogas

Structure of sessions



Impact workshop for Supergen researchers yesterday

Impact catalyst training for core Supergen team next week

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SHARE Network for early career researchers





Michael Gargaro,
University of Surrey
(*Membership*)



Dan Abudu, Aston
University (*Engagement*)



Collette Larkin, University
of Edinburgh, now SSE
(*Skills/Mentoring*)



Akshay Bagde, University of Glasgow
(*Programme Co-Chair*)



Dan Taylor, Aston University
(*Programme Co-Chair*)



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The SHARE Network





What is SHARE?

The SHARE Network provides an **informal but professional interdisciplinary network** of peers who are engaged in **bioenergy research**. We run workshops and seminars to **support knowledge exchange, promote mobility** of early career researchers and **encourage interdisciplinary collaboration**.



What SHARE Offers You

- ✓ Free training and development events
- ✓ Policy workshops
- ✓ Industry insight and site visits
- ✓ Travel and training support
- ✓ Peer-to-peer community
- ✓ Access to academic and industrial mentors



Who are the SHARE Committee?

Amin Zarei (University of Surrey)
Shadi Samizadeh (University of Lincoln)
Program Co-Chair

Jalil Yesufu (Aston University)
Media and Engagement

Ogemdi Anika (University of York)
Membership
ogemdi.anika2@dmu.ac.uk

Yuanyuan Wang (Queen's University Belfast)
Skills and Mentoring

Heidi Teran (University of Glasgow)
Treasurer



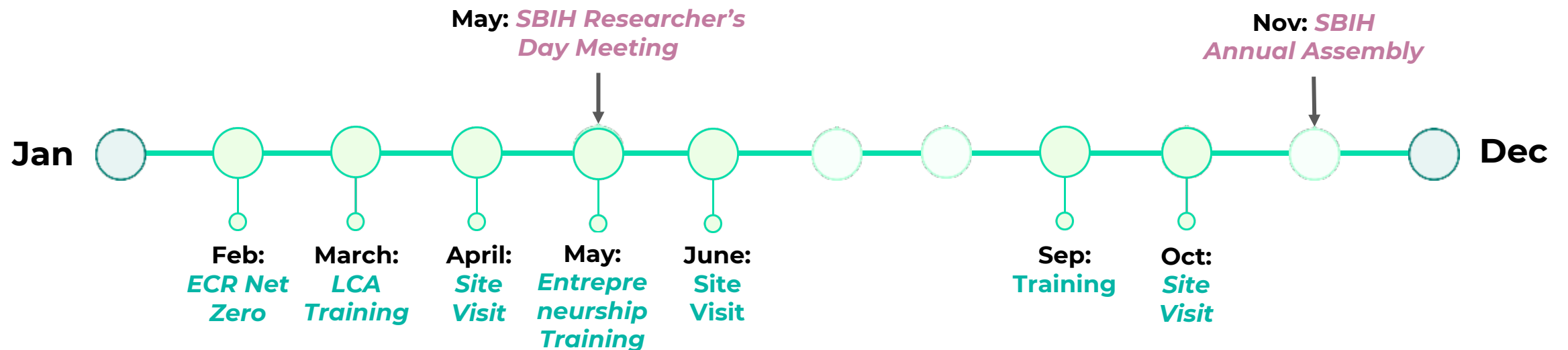
Coming soon... 2026

ECR Net Zero (Feb):

SHARE Main Event

Training x3:

- March: LCA training
- May: Entrepreneurship
- Sep: Others



How do I engage with the SHARE Network?



QR to SHARE Network!